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IMPROVED ROTARY DISPENSER WITH EXTENDED HANDLE  
FOR CREAM, LOTION, GEL OR LIQUID

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**Cross-Reference**

[0000] This application relies upon Provisional Application Serial No. 60/461,764, filed April 11, 2003, for priority.

**Field of the Invention**

[0001] This invention is directed to a dispenser for the dispensing of fluid material, particularly fluid materials for application to the body surface, with the dispenser having an extended handle for hard-to-reach surfaces such as on the users back.

**Background of the Invention**

[0002] Body lotions, creams and other fluids are often applied by simple dispensing from a container onto the user's hands, and then the user distributes it over the body. The fluid material is applied to the body, as required, in accordance with the character of the fluid material and its function.

[0003] It is desirable to have an improved system wherein a rotary dispenser applies the fluid material to the surface. In addition, in order to aid in the distribution of the fluid over parts of the body which are more difficult to reach, an extended handle is provided. Thus, improved distribution is achieved.

#### Brief Summary of the Invention

[0004] In order to aid in the understanding of this invention, it can be stated in essentially summary form that it is directed to an improved rotary dispenser with extended handle for the external body application of body-treating fluid materials including cream, lotion, gel and liquid.

[0005] It is, thus, a purpose and advantage of this invention to provide an improved rotary dispenser for dispensing body-treating fluids to the external surface of the human

[0006] It is a further purpose and advantage of this invention to provide a dispenser structure which includes a reservoir and an extended handle on the reservoir so that the fluid in the reservoir for body application can be more readily applied to all body surfaces.

[1007] It is another purpose and advantage of this invention to provide various valves which are configured to control the flow of the fluid from the reservoir.

[0008] It is another purpose and advantage of this invention to provide rotary structures, such as rollers in roller baskets in order to properly distribute the fluid onto the body surface.

[0009] It is another purpose and advantage of this invention to provide a roller head which carries thereon other implements to aid in distribution of fluid onto the body surface at any location on the body.

[0010] These and other purposes and advantages of this invention will become apparent from a study of the following portion of the specification taken in conjunction with the accompanying drawings.

#### Brief Description of the Drawings

[0011] FIGURE 1 is an isometric view of the preferred embodiment of the improved rotary dispenser with extended handle, in accordance with this invention.

[0012] FIGURE 2 is an exploded view showing the reservoir and the extended handle in exploded position.

[0013] FIGURE 3 is a section through the reservoir and extended handle on a central axial plane.

[0014] FIGURE 4 is a similar section on a plane at a right angle with respect to the plane of FIGURE 3.

[0015] FIGURE 5 is a view similar to FIGURE 1, but showing the handle extended.

[1016] FIGURE 6 is a side view through the dispensing head showing a first valve for controlling the flow of fluid from the reservoir into the dispensing head.

[0017] FIGURE 7 is a view similar to FIGURE 6, showing a second embodiment of the valve.

[0018] FIGURE 8 is a view similar to FIGURE 6 showing a third embodiment of the valve.

[0019] FIGURE 9 is a perspective view of the dispensing head.

[0020] FIGURE 10 is a similar view of the dispensing head, shown in the exploded position.

[0021] FIGURE 11 shows the basket of the dispensing head, with the parts separated.

[1022] FIGURE 12 is a perspective view of a ribbed dispensing roller.

[0023] FIGURE 13 is a transverse section through the dispensing head showing the roller of FIGURE 12 therein.

[0024] FIGURE 14 is a perspective view of the dispensing head of FIGURE 9, shown from the roller side and shown with a razor-mounting structure removably mounted in a mounting slot.

[1025] FIGURE 14a shows an end-stop detail in the slot receiving the razor blade carrier.

[0026] FIGURE 15 is a view similar to FIGURE 14 showing a comb removably installed in the mounting slot.

[1027] FIGURE 16 is a view similar to FIGURE 14, showing a sponge and a sponge carrier mounted in the mounting slot.

#### Description of the Preferred Embodiments

[0028] The dispenser for dispensing fluids including cream, lotion, gel or liquid is generally indicated at 10 in FIGURE 1. The dispenser 10 has three principal parts: reservoir 12 for containing the fluid; extended handle 14 for extending the length of the dispenser; and roller head 16 mounted on the top of the reservoir for providing the control of flow and distribution of the fluid onto the body surface. The fluid is a cosmetic or medically active fluid for human dermatological or topological use.

[0029] The reservoir 12 is preferably a hollow polymer structure such as a blow-molded bottle. Its side walls 18 are principally in the form of a tubular right circular cylinder. It has a closed bottom 20, which is integrally formed with the sidewalls. The top of the reservoir has a radially outward extending shoulder 22. The shoulder carries top 24 and the top carries spout 26. The spout has exterior threads 28 upon which a rotary dispenser can be threadedly attached and sealed.

[0030] The extension handle 14 is also made of a synthetic polymer composition structure. Its upper portion is a right circular cylindrical tube. It may have a flare 30 toward its bottom. The flare provides a wider base to increase stability when the dispenser 10 is standing on the bottom 32 of the extension

handle. On its exterior, toward the top of the flare, the handle has ribs 34 which extend all the way around the rotary handle. These ribs are to aid in secure grasp of the extension handle.

[0031] Interengagement between the reservoir 12 and handle 14 is provided in the form of threads 46, which are formed on the interior of the handle near its top, see FIGURE 2. The threads are highly angular and are multiple start threads. The axial length of the threads and the pitch of the threads is such that they can be disengaged in about a quarter turn of the extension handle 14 with respect to reservoir 12. The interior surface of the threads has a sliding fit with respect to the sidewalls 18 of the reservoir.

[0032] Reservoir 18 has corresponding threads, but on the reservoir, the threads are in interrupted sections. FIGURE 2 and 5 show sections 38 and 40 of upper interrupted threads. There may be two or three such thread sections around the circumference of the reservoir. Two is a sufficient number and is shown. The threads sections 38 and 40 are sized to threadedly engage with the threads 36. Thus, when the extension handle 14 is in the raised position on reservoir 12 as shown in FIGURES 1 and 3, the threads are engaged to hold the extension handle in place.

[0033] The reservoir 12 also has lower thread sections 42 and 44 thereon. These are the same as thread sections 38 and 40, but are placed adjacent the bottom of the reservoir. This structure permits the threads 36 to be unscrewed with respect to the thread

sections 38 and 40 by clockwise rotation of the extension handle looking down with respect to the reservoir. The extension handle is then pulled down and rotated so that the threads 36 engage with the lower thread sections 42 and 44. The handle is, thus, in the extended position shown in FIGURE 5.

[0034] In order to control the extension handle with respect to the reservoir, upper detent 46 and lower detent 48 are provided on the exterior of the reservoir. These are engaged by extension handle detent 50 seen in full lines in FIGURE 4. The extension handle detent is also shown in dashed lines in FIGURES 1, 2 and 5 because it is on the inside of the extension handle. These detents are sized and shaped so that they releasably retain the extension handle with respect to the reservoir. In addition, the reservoir carries a stop 52 which is higher than the detents 46 and 48. It is sufficiently high that it stops the extension handle from being unscrewed off of the bottom of the reservoir. In this way, the extension handle is maintained in place. The structure provides a reservoir/handle combination which can be employed to carry dermatological fluids to the skin. The handle lengthens the structure so that the disposition can be easily accomplished and hard-to-reach areas such as on the users back.

[0035] The preferred embodiment of the rotary dispensing head is generally indicated at 16 in FIGURES 6, 9, 10 and 11. The dispensing head has a mounting body 54, which has an internally



threaded collar 56. The internally threaded collar 56 may be integrally formed with the mounting body or may be a separate collar which rotates thereon. The collar threads onto the spout 26 and engages on threads 28. The mounting body thus is sealed against the spout to avoid the loss of fluid. The mounting body has a neck 58 thereon. Roller carrier basket 60 is mounted on the neck. There is an interior passage 62 through the neck which terminates in the basket 60, see FIGURES 6 and 11. Fluid product can be delivered up the passage 62 from the reservoir into the roller carrier basket. Channel 64 intersects passage 62 to extend substantially the interior length of the roller basket. The depth and width of the channel is dependent upon the viscosity of the fluid which is to be dispensed and distributed. More viscous fluid requires larger channels.

[0036] The ends of the roller basket terminate in walls 66 and 68. Within the end walls are pivot pin slots, one of which is seen at 70 in FIGURE 11. There is a pair of these slots, one on the inside of each inner wall. The slots are directed down into the basket in the direction of the channel 64 and passage 62.

[0037] Roller 72 is sized to fit into the basket 60. Roller 72 is of any convenient material which is wetted by the fluid. The roller has a pivot pin on each end. Pivot pin 74 is in FIGURE 10. There is a similar pivot pin on the opposite end. The pivot pins engage in the slots, of which slot 70 is an example. The roller 72 can move toward and away from the passage 62 by virtue of the direction of the slots. When the roller is pressed toward the

passage 62, it closes off the channel 64 and passage 62. Roller 72 is not cylindrical, but is in the general curve so that it is of larger diameter at the center than at the ends. It is an oblate spheroid truncated at both ends. The structure is such that, when fluid is dispensed from the passage 62 into channel 64, it is distributed onto the back of the roller. Then, when the roller is pressed against the skin and the dispenser 10 is moved, the roller rotates to distribute the fluid onto the skin. In order to provide maximum roller area accessible to touch to the skin, the sides of the basket are below a plane through the pivot pins on the roller. As is best seen in FIGURE 11, the sides of the basket are below the rotational axis of the roller.

**[0038]** Cover 76 is sized to fit over the roller 72. It has ears 78 and 80 which slip into corresponding recesses in the end of the basket. Recess 82 is seen in FIGURES 10 and 11. Furthermore, the ears have holes therein, such as hole 84 in ear 78. These holes snap over the projections in the recess, such as projection 86 in recess 82. This permits the cover to snap on and off of the basket. The cover is sized so that its internal ribs 88 engage on roller 72. Thus, when the cover is in place, the roller 72 is pushed down over channel 64 to close the channel. This prevents evaporation and hardening of the fluid material. In order to enhance the seal, there is an overlapping step 90 around the edge of the basket and a corresponding step in the cover. These steps interengage when the cover is in place to maintain the alignment of the cover. The cover can be snapped off by engagement on ridge 92.

[0039] The roller 72 is a moderately hard and rigid roller, which is wettable by the fluid being distributed. An alternative roller 92, shown in FIGURES 12 and 13, is of somewhat different construction and is more suitable for body application fluids of lighter viscosity. It has a fairly firm interior and has a cover 94 thereon of elastomeric material. The cover is provided with ribs 96, which sweep through the roller carrier basket 60. The ribs both seal the passage 62 when the roller is not rotating and permit the distribution of fluids of higher viscosity when the dispenser is in use and the roller is being rolled on the skin for the deposition of skin care products thereon.

[0040] Control of the outflow of fluid from the reservoir can be accomplished by pressing the roller back into its basket. For fluids of lighter viscosity, it may be helpful to have an additional valve which closes fluid flow. FIGURE 6 shows a boss 98 which is formed of part of the mounting body 54. Collar 100 slides on boss 98. Plug 102 is carried on webs within the boss 98. When the neck 98 is raised to the open position shown in FIGURE 6, the plug is away from the passage 62. When the collar is pressed down, the plug 102 enters the passage 62 to plug the passage and close off flow. The neck can be raised again to the position shown for restoration of flow. Suitable detents are provided to limit the motion in collar 100 on boss 98 to functional limits.

[0041] FIGURE 7 shows a valve dispenser head wherein the collar 104 engages around the neck 106 on the reservoir 12. The neck contains a disc 108 which has a plurality of fluid passages 110

therein. When the roller basket is in the raised position shown, the fluid passages 110 are uncovered. When a roller basket is pressed down, the circular nose 112 covers all of the fluid passages 110. The neck and roller-carrying basket can be raised to the position shown to permit flow and can be lowered so that the nose 112 covers the fluid passages 110 to prevent flow. Valving is thus achieved by up and down motion of the roller basket with respect to the reservoir.

[0042] FIGURE 8 shows a cup 104 attached onto the neck of the reservoir. Attachment can be by snap-on fit with detent, as shown. On the other hand cup may have screw threads thereon to permit threaded attachment to the reservoir. The bottom of the cup has an eccentric hole 116. The neck 118 extends down into the cup and contains an eccentric hole 120. When the dispensing head is in the position shown, the eccentric holes are out of alignment and, thus, the valve is shut. When the roller carrier basket and its neck are rotated 180 degrees from the position shown in FIGURE 8, the holes are in alignment so that fluid products can be dispensed from the reservoir into the roller carrier basket. The upper structure of the dispenser is the same as that described with respect to FIGURES 9 through 11.

[0043] The dispenser head 122, shown in FIGURES 14, 15 and 16 is the same as the dispensing head 16 and has the same roller mounting and cover structure. It may have any of the valves of FIGURES 6, 7 and 8. The roller carrier basket is seen at 124. The difference in this structure is that a bar 126 having a T-slot 128

therein is mounted on the outside of the basket. The T-slot is configured to receive a T-bar. In FIGURE 14, T-bar 130 carries razorblade 132. FIGURE 14a shows a stop 134 at the end of the T-slot to limit entry motion of the T-bar into the T-slot. In FIGURE 15, the T-bar 136 carries comb 138. In FIGURE 16, T-bar 140 carries sponge 142. One of these instruments can be inserted into the T-slot for use immediately after the application of fluid to the skin. For example, the dispenser of FIGURE 14 can dispense lubricant to aid in shaving, and the dispensing head is then turned around in the hand. Shaving is in proportion with the razorblade 132. Similarly, material can be applied to the hair by the dispensing head of FIGURE 15. Thereupon, the comb 138 is used to comb the material into the hair. The fluid material dispensed in this case can be a hair conditioning or coloring agent.

**[0044]** With respect to the structure of FIGURE 16, a fluid cleansing material can be dispensed by the dispensing head and applied by the roller. Immediately after dispensing, the sponge 142 can be applied to rub the fluid material into the skin. Thus, dispensing and distributing fluid material onto the skin can be achieved and thereafter followed with sponging.

**[0045]** This invention has been described in its presently preferred embodiment, and it is clear that it is susceptible to numerous modifications, modes and embodiments within the ability of those skilled in the art and without the exercise of the inventive faculty. Accordingly, the scope of this invention is defined by the scope of the following claims.